

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below only for the Examiner's convenience. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

No claim has been amended herein:

Claim 1 (Previously Presented): A method of optimizing recording conditions of an optical recording medium, comprising:

setting standard powers, including write, erase and bias powers, for test recording and recording a test write pattern in a plurality of tracks of the optical recording medium; and

checking a quality of a radio frequency signal reproduced from one of the plurality of tracks in which the test write pattern is recorded and which is affected by writing in adjacent tracks to determine optimum powers, including optimum write, erase and bias powers for optimized recording conditions,

wherein write pattern elements of the test write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal, so as to generate a write pattern having optimum write pattern elements used for data recording on the optical recording medium.

Claim 2 (Previously Presented): The method of claim 1, wherein the test write pattern comprises a combination of marks of two or more different lengths and a space in the plurality of tracks of the optical recording medium.

Claim 3 (Original): The method of claim 1, wherein the test write pattern comprises a first mark of length T, and a second mark of length NT which is longer than the first mark and in which power is saturated due to the formation of the marks, and a space, and wherein T is a cycle of a recording and/or reproducing clock and N is an integer.

Claims 4-7 (Canceled):

Claim 8 (Previously Presented): The method of claim 1, wherein the optimum powers, including the optimum write, erase and bias powers, are checked using the magnitude of the radio frequency signal.

Claim 9 (Previously Presented): The method of claim 1, wherein the standard powers, including the write, erase and bias powers, are adjusted respectively until the optimum powers are obtained, using the magnitude of the radio frequency signal.

Claim 10 (Previously Presented): The method of claim 1, wherein the checking further comprises optimizing write pattern elements of the test write pattern using the asymmetry value of the radio frequency signal.

Claim 11 (Previously Presented): The method of claim 1, wherein the checking further comprises optimizing write pattern elements of the test write pattern using the jitter value of the radio frequency signal.

Claim 12 (Previously Presented): A method of determining optimum powers necessary for recording by performing test recording on an optical recording medium, comprising:

setting standard powers, including write, erase and bias powers, for test recording and recording a test write pattern in a plurality of tracks of the optical recording medium; and

determining optimum powers, including optimum write, erase and bias powers, using a radio frequency signal obtained from the test write pattern reproduced from one of the plurality of tracks affected by writing in adjacent tracks,

wherein write pattern elements of the test write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal, so as to generate a write pattern having optimum write pattern elements used for data recording on the optical recording medium.

Claims 13-18 (Canceled):

Claim 19 (Original): The method of claim 12, wherein the magnitude of the radio frequency signal is determined to be a peak-to-peak value of a radio frequency signal for a mark of length T of the test write pattern in which a power is saturated due to the formation of marks.

Claim 20 (Previously Presented): The method of claim 12, wherein the determining comprises:

reproducing the test write pattern recorded in a middle track of the plurality of tracks affected by writing on adjacent tracks to output a radio frequency signal; and

fixing two of the standard write, bias, and erase powers and varying the other one of the standard write, bias, and erase powers within a range to determine the optimum write, bias, and erase powers when the magnitude of the radio frequency signal is at a maximum.

Claim 21 (Previously Presented): The method of claim 12, wherein each of the standard powers, including write, erase and bias powers, is adjusted for test recording until the magnitude of the radio frequency signal is at a maximum so as to determine the optimum powers, including optimum write, erase and bias powers.

Claims 22-24 (Canceled):

Claim 25 (Previously Presented): The method of claim 12, further comprising:
reproducing the test write pattern recorded on the optical recording medium to output the radio frequency signal; and

determining the optimum powers, including optimum write, erase and bias powers, using the magnitude of the radio frequency signal.

Claim 26 (Previously Presented): The method of claim 25, wherein, when the magnitude of the radio frequency signal is a maximum amplitude, a write pattern element of the test write pattern indicating a period of time for which a cooling pulse lasts is determined.

Claim 27 (Previously Presented): The method of claim 25, further comprising optimizing write pattern elements of the test write pattern using the asymmetry value of the radio frequency signal.

Claim 28 (Previously Presented): The method of claim 27, wherein, when the asymmetry value of the radio frequency signal is at a minimum, a write pattern element of the test write pattern indicating a shift amount of a starting edge of a first pulse is determined.

Claim 29 (Previously Presented): The method of claim 25, further comprising optimizing write pattern elements of the test write pattern using the jitter value of the radio frequency signal.

Claim 30 (Previously Presented): The method of claim 29, wherein, when the jitter value of the radio frequency signal is at a minimum, a write pattern element of the test write pattern indicating a width of the first pulse is determined.

Claim 31 (Previously Presented): The method of claim 29, wherein, when the jitter value of the radio frequency signal is at a minimum, a write pattern element of the test write pattern indicating a width of multi-pulses is determined.

Claims 32-60 (Canceled):

Claim 61 (Previously Presented): The method of claim 1, wherein the optimum write pattern elements of the write pattern include information indicating a width of a first pulse of the write pattern, information indicating a shift amount of a starting edge of the first pulse of the write pattern, information indicating a width of the multi-pulses of the write pattern, and information indicating a period of time for which a cooling pulse lasts.

Claim 62 (Previously Presented): The method of claim 12, wherein the optimum write pattern elements of the write pattern include information indicating a width of a first pulse of the write pattern, information indicating a shift amount of a starting edge of the first pulse of the write pattern, information indicating a width of the multi-pulses of the write pattern, and information

indicating a period of time for which a cooling pulse lasts.